PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<u>see an example</u>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

| TITLE (PROVISIONAL) | Violence, HIV risk behavior and depression among female sex |
|---------------------|---|
| | workers of Eastern Nepal. |
| AUTHORS | Sagtani, Reshu; Bhattarai, Sailesh; Adhikari, Baikuntha; Baral, |
| | Dharanidhar; Yadav, Deepak; Pokharel, Paras |

VERSION 1 - REVIEW

| REVIEWER | Amanda Roxburgh Senior Researcher National Drug and Alcohol Research Centre University of New South Wales Australia | |
|-----------------|---|--|
| | I have no competing interests to declare | |
| REVIEW RETURNED | 05-Mar-2013 | |

It would be good if the authors could have someone proofread the

THE STUDY

| | paper to make it easier to read and check for grammatical errors |
|------------------|--|
| GENERAL COMMENTS | This is an interesting paper investigating the mental health of female sex workers in Nepal. My comments for revision are relatively minor. |
| | General comments |
| | If the authors could have someone carefully proof read the paper for readability and English grammar it would strengthen the paper. |
| | IN |
| | Abstract |
| | I'd suggest the authors remove the confidence intervals from the abstract as they should really appear in the results. |
| | Introduction |
| | The authors state that the mental health of sex workers has largely been ignored in the literature however they then go on to quote some of this literature (the Peurto Rican study and a study conducted in China) in the discussion. There is a quite a large literature on mental health (PTSD, depression, drug dependence) among sex workers. The introduction would be improved if they reviewed some of this literature up front then stated how their paper adds to this literature (i.e. what is unique about their study? Is it geographic uniqueness? Something that they've measured that hasn't been measured previously?). |

Material and Methods

Could the authors please spell out the sample size formula a bit more clearly as well as provide a citation or reference for it. It won't be clear to many readers what P is or that Q is 100-p. L also needs to be defined.

Apart from the syringe exchange measure, was there any data collected on drug or alcohol use? Substance use will be an important confounder when looking at mental health issues, and should be included as a predictor or at least controlled for in the regression model. If substance use was not collected then this should be mentioned as a limitation of the study.

Could the authors please provide a reference for the SPSS package used.

Results

The authors could probably remove table 1 and just report the percentages and numbers in text. It doesn't really add much to present it as a table.

Throughout the results where the authors state that FSW were x times more likely, could they please report the Odds Ratios (OR) and the 95% Confidence intervals (CI). There are 95% CIs throughout the results without the ORs reported.

On page 8 in the paragraph under the sub-heading RESULTS, could the authors change the following sentence from:

"Consequently, female sex workers who had been insulted had three times higher chances of suffering from depressive symptoms"

To:

"However, female sex workers who had been insulted were three times more likely to report depressive symptoms than those who had not"

On page 9 in the last sentence of the results, could the authors please change the following sentence from:

"Thus, our study shows that violence and HIV risk behaviour are significant predictors of depression."

To:

"Thus, our study shows that violence and HIV risk behaviours are significantly associated with depression."

Given that this is a cross-sectional study it's very hard to say what predicts depression, and it may be that the relationship goes the other way – e.g. women may be more likely to engage in HIV risk

behaviours because they are depressed and their ability to negotiate safer practices may be impaired.

Discussion

Page 10 in the first paragraph could the authors please change the following sentence from:

"A Nigerian study concluded that in comparison with women of other occupational groups the female sex workers are psychopathological"

To:

"A Nigerian study concluded that in comparison with women of other occupational groups, female sex workers were at greater risk of screening positive across many forms of psychopathology."

The sentence beginning with "In accordance with popular belief" Should this read in accordance with previous research?

ORs from other studies are not necessary in the discussion and could be removed.

Page 11, second paragraph, should the opening sentence "... violence are significant predictors of violence" read "... violence are significant predictors for depression".

Finally, I think it would round the discussion off nicely if the authors could suggest some useful public health initiatives that arise from their findings. For example, what sort of mental health initiatives or harm reduction campaigns would be useful? Would the provision of mental health care services for these women ameliorate some of the risks they take? Etc.

Table 2

This table would be easier to read without the no categories.

Could the authors add a column and include the p values.

Table 3

Comments as per Table 2.

| REVIEWER | Allen Furr |
|-----------------|--|
| | Professor and Chair |
| | Department of Sociology, Anthropology, and Social Work |
| | Auburn University |
| | USA |
| REVIEW RETURNED | 08-Mar-2013 |

| THE STUDY | The introduction of the study should address the mental health of |
|-----------|---|
| | sex workers in general and Nepal in particular. As currently written, |

the introduction should include an argument as to why the research question is important and how it was derived or deduced. In short, the study requires a better defined justification, beyond saying there is no literature on mental health of sex workers. Although authors state in the intro that there is no literature on this subject, they provide a literature review in the concluding section of the paper. Also in the intro, the authors discuss three "dimensions" without specifying dimensions of any particular factor. In other words, what are these dimensions of?

The design of the study appears exploratory; however, given that there are a number of studies that document that sex workers suffer more mental health problems (and one that doesn't, which the authors do not reference), the case needs to be made as to why sex workers in Nepal require special research attention.

Methods: (1) the terms in the sample size calculation must be specified; (2) that 70% of Puerto Rican sex workers are depressed should be reported in the literature review section; (3) what is the justification for the HIV variable? No reasons stated for its relevance in the introduction.

The authors state that health research is limited to the study of customers of sex workers; however, there are many studies on the health of sex workers.

The questions on psychological abuse and violence should be stated. The finding that having been insulted correlates with depression may be spurious because we cannot determine the severity or duration of the insulting behavior. If it occurred only once, I find it hard to believe that such an one-off incident can cause clinical depression.

The paper requires significant editing, although the authors' English is commendable and appreciated.

A number of studies on this subject are not included. On Page 10, the authors state "In accordance with the popular belief" women experiencing violence become more depressed. What is meant by "popular belief" is not clear.

RESULTS & CONCLUSIONS

On Page 11, the authors state that they cannot infer that sex workers become depressed before or after entering the trade. The Results Section, however, stated that HIV and violence are predictors of depression, which implies temporal order of events. The violence measured in the study is workplace violence, as stated on page 7, which further clouds the matter.

If the researchers want to study HIV risk behavior in relation to depression, they should entertain the notion that depression may cause or at least precede the high-risk behavior.

The authors conclude that several of the violence variables predict depression. However, there are no controls in the models that allow us to know how much of the variance in depression is due to those variables. For example, regarding the psychological abuse variables, 90% of those women having been insulted score high on the depression measure. However, 73% of those not experiencing an insult also reported high depression scores. The depression rate seems high either way. For intimidation, 91% having experienced intimidation report depression; however, 80% of those not

| experiencing intimidation were also depressed. Controls are needed in the equations to determine if these variables are spurious. Other |
|---|
| variables are similarly positioned. (There may be a typo in the |
| "pushed or shoved" variable for "yes".) |

VERSION 1 – AUTHOR RESPONSE

Dear Amanda, I have made changes according to your comments but in the table I have not removed the categories as I have compared percentage distributions among depressed and non-depressed group.

Dear Allen, I have justified the need of HIV variable and also removed the term "predicts depression" to associated with depression. Regarding the severity and frequency of violence, since that data was not recorded it has been put in the limitation of the study.

I hope the revised manuscript will be according to your vision and you all will enjoy reading it.

VERSION 2 – REVIEW

| REVIEWER | Allen Furr Professor and Chair |
|-----------------|--------------------------------|
| | Auburn University (USA) |
| REVIEW RETURNED | 08-Apr-2013 |

| THE STUDY | The paper requires careful editing. Page 4, line 6. Who does "one" reference? "one" should be specified. |
|------------------|--|
| | What is FSW? How does it differ from CSW? |
| GENERAL COMMENTS | Thank you for your re-submission and attention to the first reviews. |

VERSION 2 – AUTHOR RESPONSE

- 1. The paper had been edited. Hopefully, the reviewers are satisfied with the language of the manuscript.
- 2. "One" refers to the female sex workers and has been clearly mentioned now in the manuscript.
- 3. The commercial sex workers (CSWs) refers to female sex workers (FSWs), male sex workers (MSW) and male who have sex (MSM) with men who are involved in commercial sex activity. So, CSWs are a larger group of which FSWs are a part of.